



CONFIDENTIAL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Moore, *et al.* Confirmation No.: 1774
Serial No.: 09/923,506
Group: 2645
Examiner: Elahee, Md S.
Date Filed: August 6, 2001
Docket No.:
IBM Docket No.: BOC9-2001-0006 (241)

DECLARATION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Barry E. Willner, a citizen of the United States of America, residing at 365 Pine Road, Briarcliff Manor, NY 10510, hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) in Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.

2. IBM had invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).

3. As a named co-inventor for this invention, I submitted the attached Invention Disclosure No. BOC8-2000-0003 together with my co-inventors, Victor S. Moore, and Edith H. Stern.

4. IBM Confidential Invention Disclosure BOC8-2000-0003 was originally submitted for consideration to an IBM Attorney / Patent Professional for preparation of a patent application on January 18, 2000. The content of the disclosure has not been subsequently modified. The disclosure represents a fully conceived and workable invention as written. I reviewed the claims of the above-mentioned patent application prior to submission of the

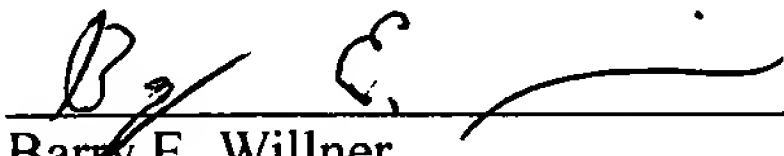
Declaration Under 37 C.F.R. §1.131
U.S. Patent Appln. No. 09/923,506
Docket No. BOC9-2001-0006 (241)

application to assure the claimed invention was fully supported by the disclosure in light of the invention disclosure and art known at the time of the disclosure.

5. I diligently worked with outside counsel in the Spring of 2001 to prepare and file the above-mentioned patent application.

6. I make this Declaration to establish that my co-inventors and I conceived of the present invention at least as early as January 18, 2000, and exercised due diligence from prior to January 18, 2000 through August 6, 2001, the filing date for the above-identified patent application.

7. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

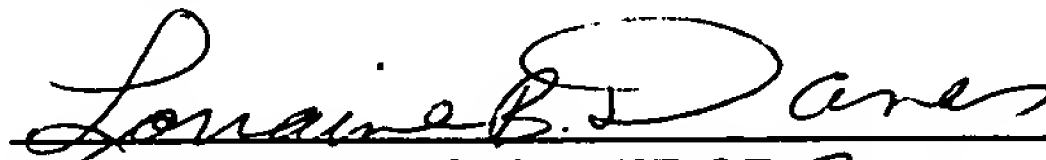

Barry E. Willner

Date: 9/21/04

STATE OF New York)
COUNTY OF Westchester) ss:

The foregoing instrument was sworn to and subscribed before me this 21st day of September, 2004, by BARRY E. WILLNER, who is personally known to me or who has produced IBM Photo Badge (type of identification) as identification.

LORRAINE B. DANAS
NOTARY PUBLIC, State Of New York
No. 01DA6025767
Qualified In Westchester County
Commission Expires June 01, 2007


NOTARY PUBLIC, STATE OF New York
(Print, Type or Stamp Commissioned Name of Notary Public)

**CONFIDENTIAL****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Edith H. Stern, a citizen of the United States of America, residing at 661 Hanover Street, Yorktown Heights, NY 10598 hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) in Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.

2. IBM had invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).

3. As a named co-inventor for this invention, I submitted the attached Invention Disclosure No. BOC8-2000-0003 together with my co-inventors, Victor S. Moore, and Barry E. Willner.

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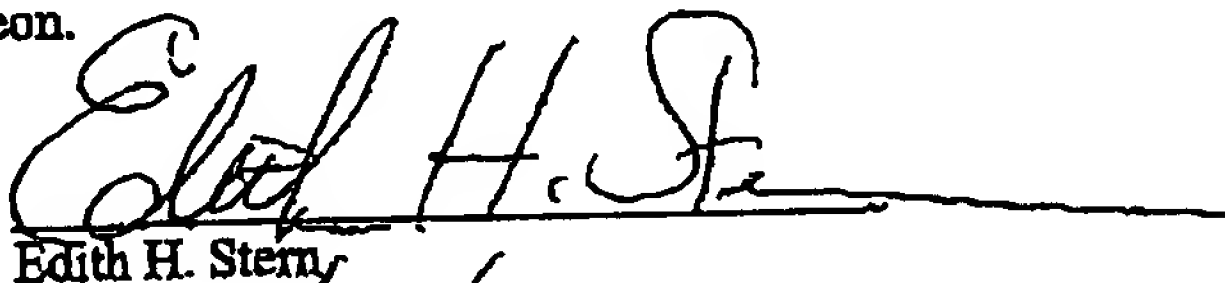
Declaration Under 37 C.F.R. §1.131
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application to assure the claimed invention was fully supported by the disclosure in light of the invention disclosure and art known at the time of the disclosure.

5. I diligently worked with outside counsel in the Spring of 2001 to prepare and file the above-mentioned patent application.

6. I make this Declaration to establish that my co-inventors and I conceived of the present invention at least as early as January 18, 2000, and exercised due diligence from prior to January 18, 2000 through August 6, 2001, the filing date for the above-identified patent application.

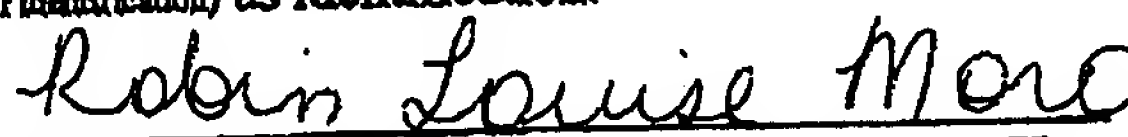
7. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.


Edith H. Stern

Date: 9/24/04

STATE OF NEW YORK)
) ss:
COUNTY OF _____)

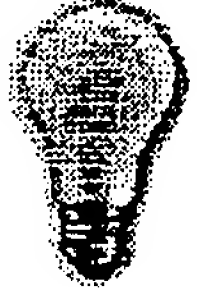
The foregoing instrument was sworn to and subscribed before me this 24th day of September, 2004, by EDITH H. STERN, who is personally known to me or who has produced _____ (type of identification) as identification.


NOTARY PUBLIC, STATE OF NEW YORK

(Print, Type or Stamp Commissioned Name of Notary Public)

Robin Louise Moro
Notary Public, State of NY
No. 0106046019
County of Westchester
Commission Expires July 17, 2008

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	Disclosure BOC8-2000-0003
	Created By: Edie Stern Created On: 01/06/2000 10:38:39 PM
	Last Modified By: Edie Stern Last Modified On: 01/26/2000 04:57:07 PM
	*** IBM Confidential ***

Required fields are marked with the asterisk (*) and must be filled in to complete the form.

Summary

Status	Under Evaluation
Processing Location	BOC
Functional Area	Telecommunications & Media
Attorney/Patent Professional	Richard Tomlin/Boca Raton/IBM
IDT Team	Edie Stern/Fort Lauderdale/IBM
Submitted Date	01/18/2000 06:28:18 PM
Owning Division	GI Add/Change
PVT Score	To calculate a PVT score, use the 'Calculate PVT' button.
Incentive Program	
Lab	
Technology Code	

Inventors with Lotus Notes IDs

Inventors: Edie Stern/Fort Lauderdale/IBM, Vic Moore/Fort Lauderdale/IBM, Barry Willner/Watson/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
> Stern, Edith H.	00000	GI	00000	
Moore, Victor S.	00000	GI	00000	
Willner, Barry E.	00000	GI	00000	

Inventors without Lotus Notes IDs

IDT Selection

IDT Team: Edie Stern/Fort Lauderdale/IBM	Attorney/Patent Professional: Richard Tomlin/Boca Raton/IBM
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Response Due to IP&L : 02/25/2000

Main Idea

*Title of disclosure (in English)

Multi tier ASP/Software Delivery for Wireless Devices

*Idea of disclosure

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

The internet and internet access are experiencing phenomenal growth with more and more people taking advantage through personal computers, and more recently, network computers. This growth is about to take a giant leap forward with the explosion of pervasive devices capable of wireless data communication, including communication to the internet.

Sprint has announced and is selling web phone service in the US (Sprint PCS Wireless Web, <http://www.sprintpcs.com/wireless/index.html>), and Nokia is selling their Nokia 9110 Communicator in Europe today (<http://www.nokia.com/phones/9110/index.html>).

For traditional PCs, traditional applications are available as shrink-wrapped client applications. Many businesses are investing in web based applications, for CRM and other business to consumer needs. Recently, Application Service Providers (ASPs) have arisen to provide a new service over the internet. ASPs provide not just content, but applications to their subscribers. ASPs include Corio (<http://www.corio.com>), iProvide (<http://www.i-provider.net/iprovide/asp.html>), TriZetto Group (specializing in the healthcare industry, at <http://www.trizetto.com>).

ASPs can significantly decrease the resource required to manage application sets on the desktop. To date, ASPs require a fair amount of bandwidth connectivity to their subscribers, and a short latency period to allow subscribers to receive adequate response time on these applications. ASPs have not provided wireless support for wireless pervasive devices, as these have lesser connectivity capabilities and system resources.

Our invention provides a system and method of providing applications for wireless devices, via a two tier service, taking advantage of both wireline capabilities and shortrange wireless capabilities. Our invention uses geographically based service discovery techniques to allow wireless devices to identify local ASP points of presence (microASPs), seek desired applications, and should the microASP not contain the desired application, allow for the microASP to obtain the application via landline connections. This enables near real time use of new applications for a wide variety of wireless devices, with minimal capabilities both in system resource and in bandwidth connectivity. It also enables a new business model, of local microASP service for what is expected to be an extraordinarily large population of pervasive devices, which will number in the tens and hundreds of millions.

2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?

Pervasive devices today are converging from two bases.

Cellular telephones are increasingly intelligent, with devices such as the Benefon Personal Navigation Phone (<http://www.benefon.com/>) providing GPS based mapping and location services, and devices such as the Nokia 9110 providing fax, internet e-mail, notepad and calendar functions. These applications are in addition to standard cellular service.

PDAs, notably 3COMs Palm Pilot, with or without wireless data communication capability are also increasingly popular. Applications for expense accounts, notes, todo lists, and so on are standard, with content and software readily available for download from the web. In general these devices are tethered for download, receiving their information while docked in a cradle connected with a wired connection to a PC. However, 3COM and Nokia have leagued together, promising increasing convergence in these two worlds.

A new kind of wireless connection is about to burst on the market. Emerging standards for personal area networks (eg Bluetooth <http://www.bluetooth.com/v2/default.asp>) have a different communications profile than cellular. Such networks operate over a very limited local range. Bluetooth communications works in picocells, with a maximum range of up to 100 meters. This invention is not limited to Bluetooth, but any type of wireless communications enabling handheld devices to communicate directly to the microASPs.

Pervasive computing also boasts service discovery protocols such as that proposed by the Salutation Consortium (<http://www.salutation.org>) where devices with PAN communications capability will automatically be aware of services and connectivity available in the area. Bluetooth devices using such protocols are aware of new devices and their capabilities as they enter the communications cell. Additionally, these radios require little power, so it is anticipated that they can be essentially open for connection for long periods of time ("always-on"). Bluetooth is expected to provide services such as communication between distributed system components, such as wireless data modems supplied as part of a cell phone and laptops, presumably still in the briefcase. Bluetooth is also expected to provide connectivity to physically local printers and other I/O devices.

Our invention is a system, method and business model which provides ASP services, mobilely for wireless devices.

In a preferred embodiment, wireless devices equipped with communications such as Bluetooth seek local microASPs via normal Bluetooth communications. Once communications has been established, the desired application support is sought from a communicating microASP. If there is no microASP within range, an indicator so informs the user. If there is an microASP, the wireless device establishes that the user is a subscriber to the service, or alternately establishes a method of payment (micropayments, credit cards, etc.) and requests connectivity to the desired application. If the microASP does not have the application, it retrieves it from a central ASP repository along with any required user data. The microASP then services the wireless device, wirelessly, within the short range allowed by the communications method. This reduces significantly the latency encountered, and reduces the use of WAN service. By using short range microASPs, it is possible to target the applications for the geography, eg applications desired by travelers in airports or train stations. Such microASPs may also function as local caches for internet content.

Use of microASPs allows casual use of applications by wireless devices, and can involve either downloading complete applications (eg a crossword puzzle game) for carry away use, or can involve traditional ASP hosting of complex applications (eg business applications).

It is expected that such microASPs will be available in areas of public traffic, such as airports and shopping malls. One business model is that enterprises with existing small-footprint real estate will use their space to incorporate microASPs. A preferred embodiment would have carriers operating payphones adding this capability to the payphone installation. Payphones are already "wired" endpoints. Users would approach the payphone, already well marked and obvious, to use the services of the microASP. In fact, with cellular use increasing and payphone use decreasing, this may be an excellent use of this infrastructure. In areas of dense traffic, and presumably increased

use of such services, scaling is accomplished by adding more microASPs.

Services accessed via a microASP can allow wireless devices to treat the microASP as an application cache. That is, a wireless device may have user selectability of a number of applications (eg productivity, games, all the applications available on a traditional desktop). The device presumably would not have these in active storage, and should the application be selected, the user would receive a message that the application must be obtained from an ASP. That is, the device may attempt to retrieve the application or application data from its own storage, and failing to find it, may access wireless the closest microASP. The microASP can then either download the application, provide it as a traditional ASP, or if it does not have current access to the application, the microASP can use its wired connection to obtain it. In travelled areas such as an airport, this can result in a wireless device with virtual access to a vast number of device-appropriate applications and content.

Alternatively, devices could access an ASP cellularly, with the resultant more narrow bandwidth. In this case, selecting a local microASP provides some measure of latency relief, but far less than arrangements which do not require WAN resources.

To make clear the heart of the invention the main system claim might read -

A system for providing application and content services to a plurality of wirelessly connected recipients comprising

- a plurality of data processing systems with
 - wireless capability to communicate with said recipients' systems
 - a store for storing applications and content
 - a data processor for executing applications and servicing user requests
 - a connection to a telecommunications network for accessing a plurality of servers
- storing applications and content
- said data processors responsive to said users' requests determines if said applications or content are in the store of the data processor, and in the absense of said applications or content, said data processor retrieves said applications or content through the telecommunications network from said servers.
- said data processors responsive to said users' requests servicing such requests from applications or content contained in the store of said processor

Prior Art:

Discovery protocols

Existing ASPs

Content Caches, such as Akamai

WAP - wireless application protocol. This architecture is an extension of existing web architecture to enable wireless participation. A gateway provides encoding/decoding to allow a device to communicate with a server in the web. This may be an underlying element of microASPs.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?

The population of mobile devices is currently dominated by voice only cell phones, and modem equipped laptops. These devices either have no application capability, or use cellular or wireline modems to communicate. The ASP model is just now emerging to service wireline connected endpoints, and has not addressed the unique problems of wireless. WAP protocols allow some function on equipped cell phones, but are not consistent with an ASP business model.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.
not at this time

***Critical Questions (Questions 1 - 7 must be answered)**

*Question 1 On what date was the invention workable? 01/18/2000 Please format the date as MM/DD/YYYY (Workable means i.e. when you know that your design will solve the problem)

*Question 2 Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	
Are you aware of any publications, products or patents that relate to this invention?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	

*Question 3 Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Is a sale, use in manufacturing, product announcement, or proposal planned?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made. Product: Version/Release: Code Name: Date: To Whom: If more than one, use cut and paste and append as necessary in the field provided.	

*Question 4 Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If yes, give a date. Please format the date as MM/DD/YYYY	

*Question 5 Have you ever discussed your invention with others not employed at IBM?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #	

*Question 6 Was the invention, in any way, started or developed under a government contract or project?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not sure
If Yes, enter the contract number	

*Question 7 Was the invention made in the course of any alliance, joint development or other contract activities?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Sure
If Yes, enter the following: Name of Alliance, Contractor or Joint Developer	
Contract ID number	
Relationship contact name	
Relationship contact E-mail	
Relationship contact phone	

Question 8 Have you submitted, or are you aware of, any related disclosure submission?	<input type="radio"/> Yes <input checked="" type="radio"/> No
If Yes, please provide the title and docket or disclosure number below:	

Question 9 What type of companies do you expect to compete with inventions of this type? <i>Check all that apply.</i>
<input type="checkbox"/> Manufacturers of enterprise servers <input type="checkbox"/> Manufacturers of entry servers <input type="checkbox"/> Manufacturers of workstations <input checked="" type="checkbox"/> Manufacturers of PC's <input type="checkbox"/> Non-computer manufacturers <input type="checkbox"/> Developers of operating systems <input type="checkbox"/> Developers of networking software <input type="checkbox"/> Developers of application software <input checked="" type="checkbox"/> Integrated solution providers <input checked="" type="checkbox"/> Service providers <input type="checkbox"/> Other (Please specify below)

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the eval Post Disclosure Text & Drawings

(Form Revised 12/17/97)